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cita
CENTRO DE INVESTIGACIÓN Y TECNOLOGÍA AGROALIMENTARIA DE ARAGÓN

Effects of feeding system on the carcass and meat fat depots in Churra Tensina light lambs raised on Spanish dry mountain areas

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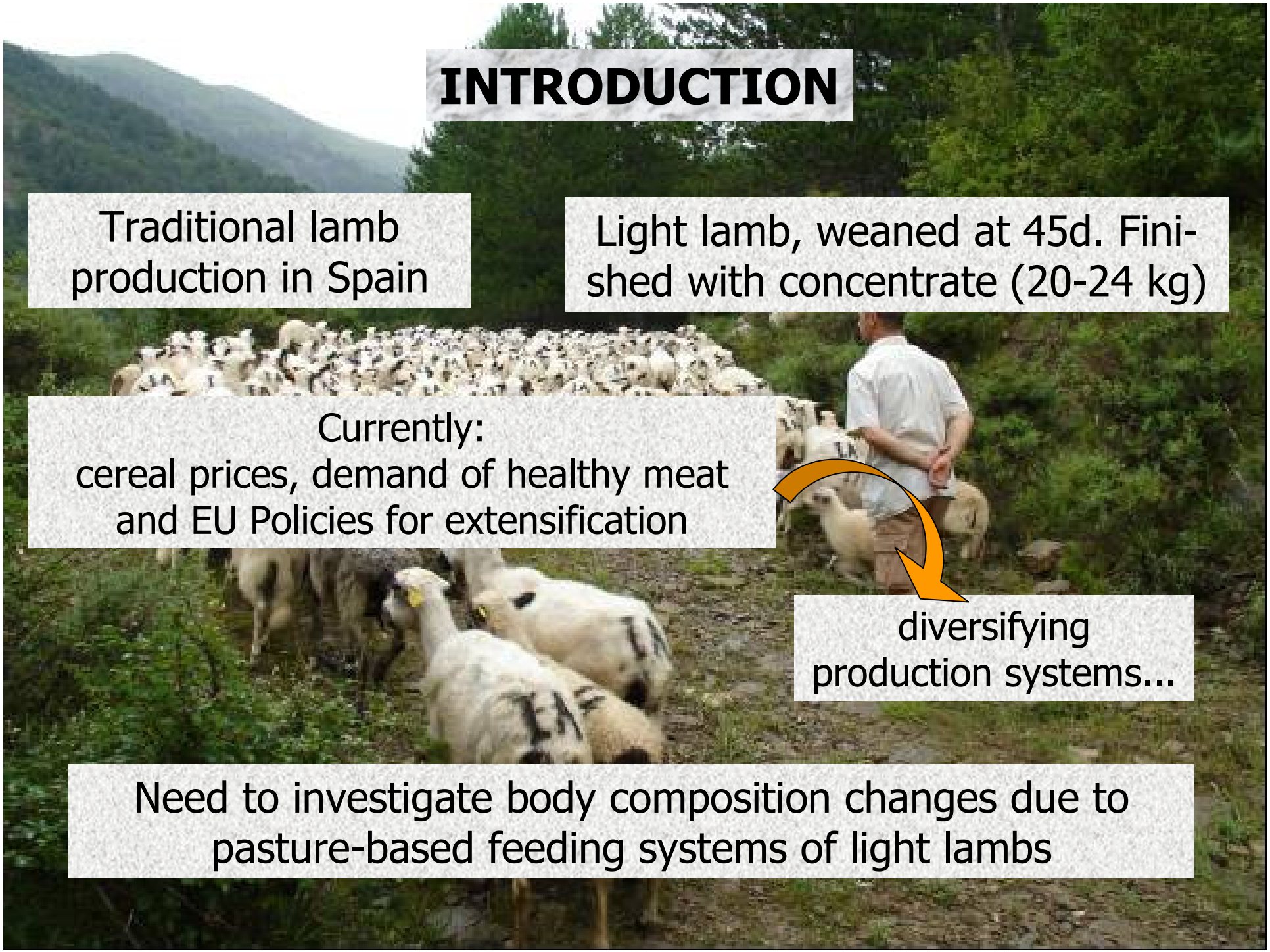


INTRODUCTION

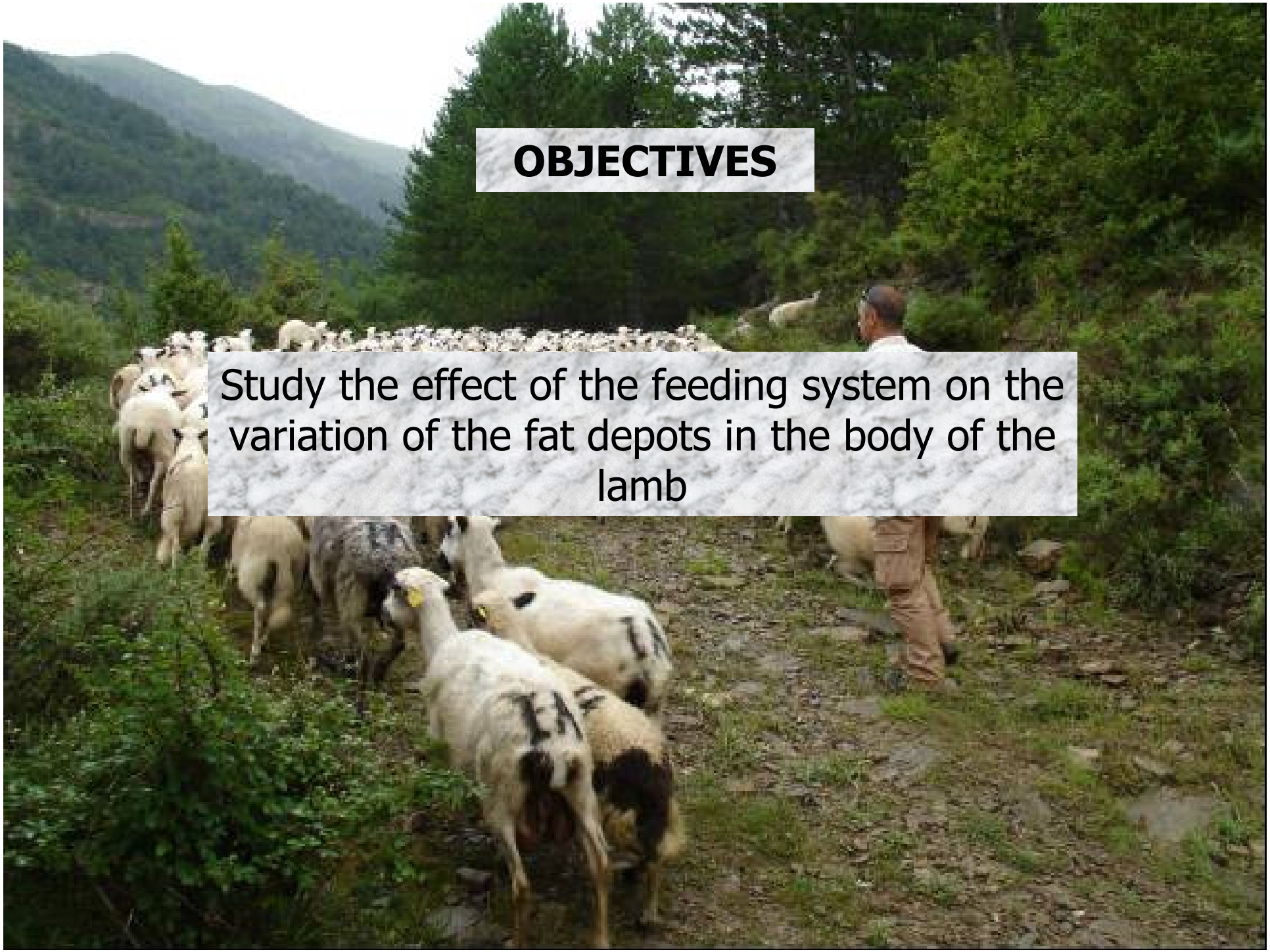
Traditional lamb production in Spain

Light lamb, weaned at 45d. Finished with concentrate (20-24 kg)

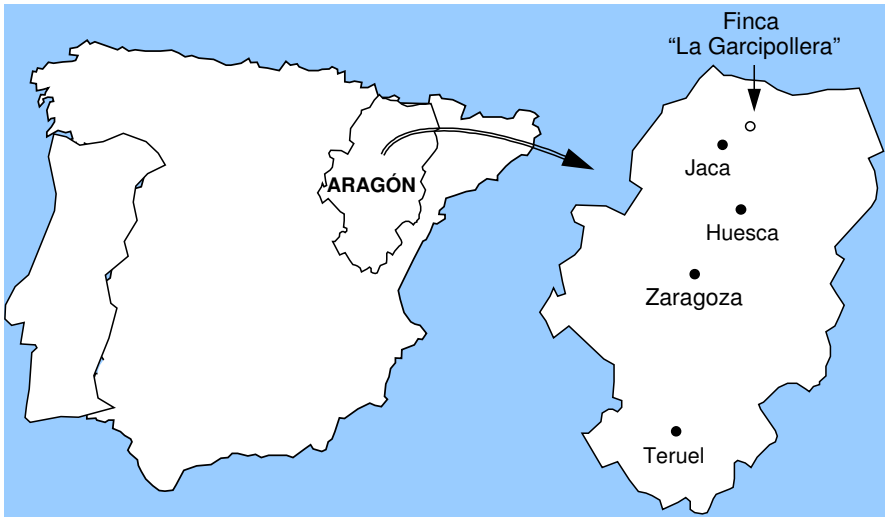
Currently:
cereal prices, demand of healthy meat and EU Policies for extensification

diversifying production systems...

Need to investigate body composition changes due to pasture-based feeding systems of light lambs


OBJECTIVES
Study the effect of the feeding system on the variation of the fat depots in the body of the lamb

MATERIAL AND METHODS



"La Garcipollera" Research Station (CITA-Aragón), the mountain area of the central Pyrenees *(North-eastern Spain, 42°37'N, 0°30'W, 945 masl)*

Conducted in spring

48 Churra Tensina single-born male lambs.

Divided into 4 treatments from birth to slaughter

GRAZING GROUPS

Ewes and lambs, on permanent pasture. Suckled until slaughter

1) G: without supplement

2) GS: Only lambs were supplemented

DRYLOT GROUPS

Lambs under indoors conditions with concentrate, the weaning was at 45 d.

3) DE: ewes grazed (8 h) and supplemented with barley meal

4) D: ewes were fed unifeed

Slaughter: 21-24 kg LW

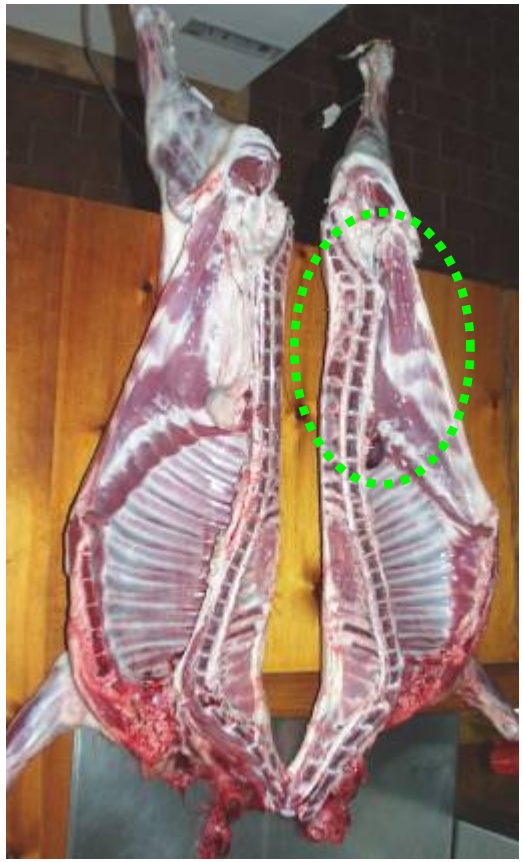
According to EU laws for animal welfare

After the slaughter:

Omental fat +
Mesenteric fat
removed
and weighed

24 h *post mortem*
(chilled at 4°C)

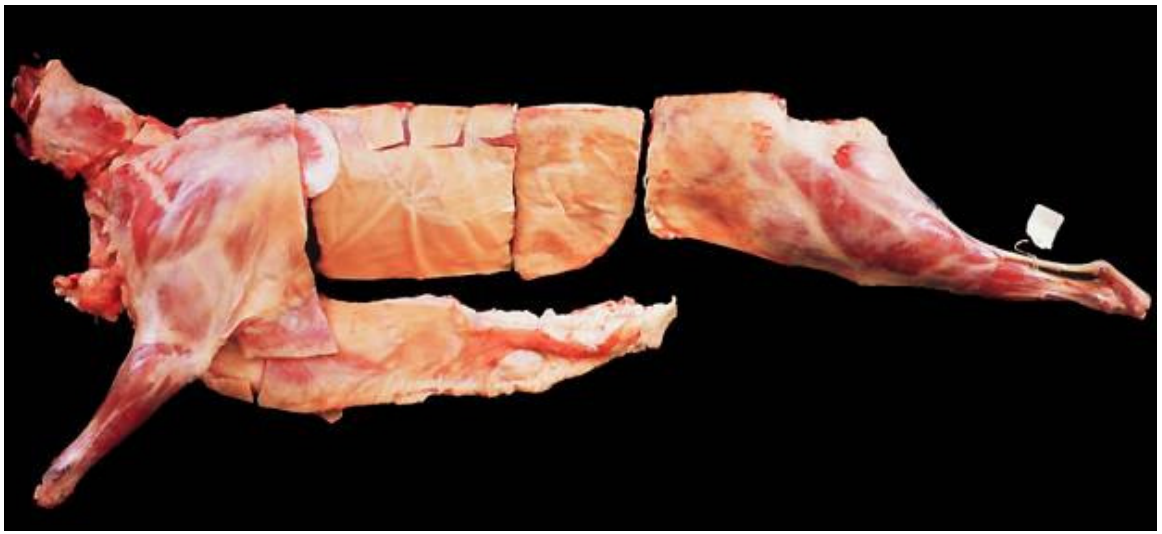
Pelvic and Kidney fat
were removed and weighed



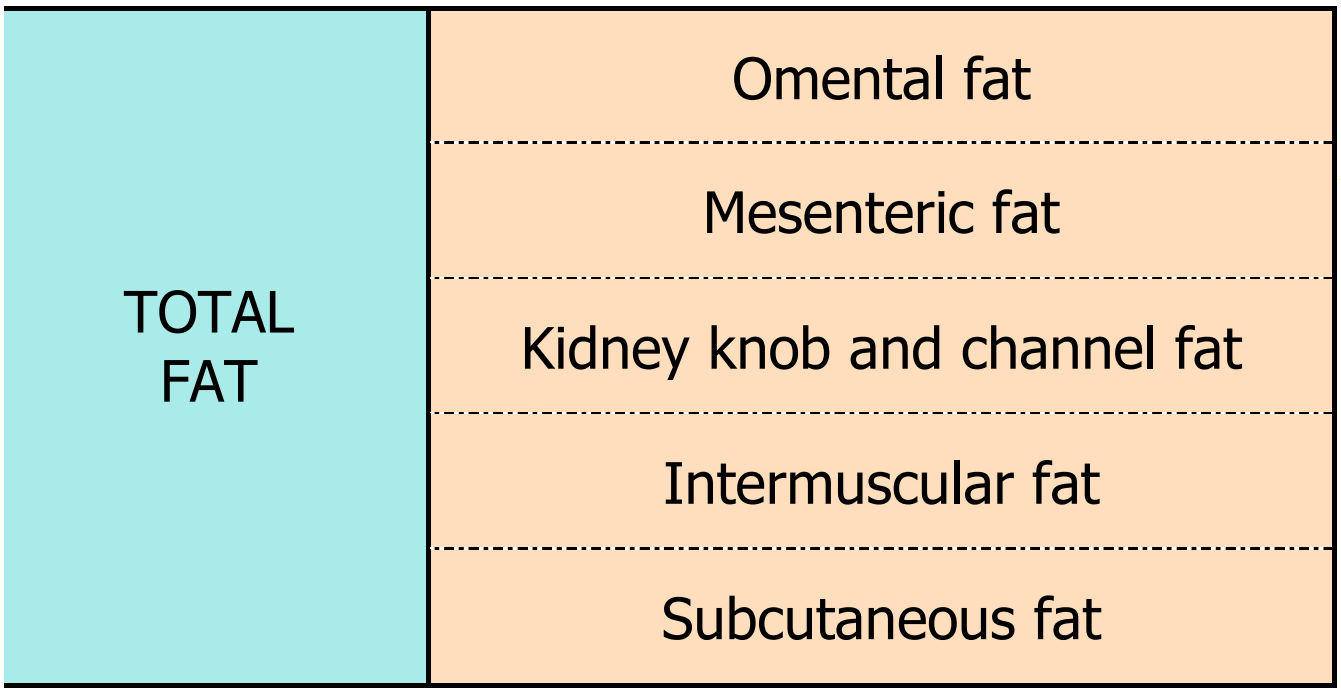
The half left carcass

- Standardised joints (6)
- Dissected in muscle, bone, fat (subcutaneous, intermuscular) and waste

(Colomer-Rocher et al., 1988)



Intramuscular fat: AOCS Methododology



RESULTS

Table 1.
Performance of lambs and Carcass characteristics

- There were differences: Performance of lambs and carcass characteristics

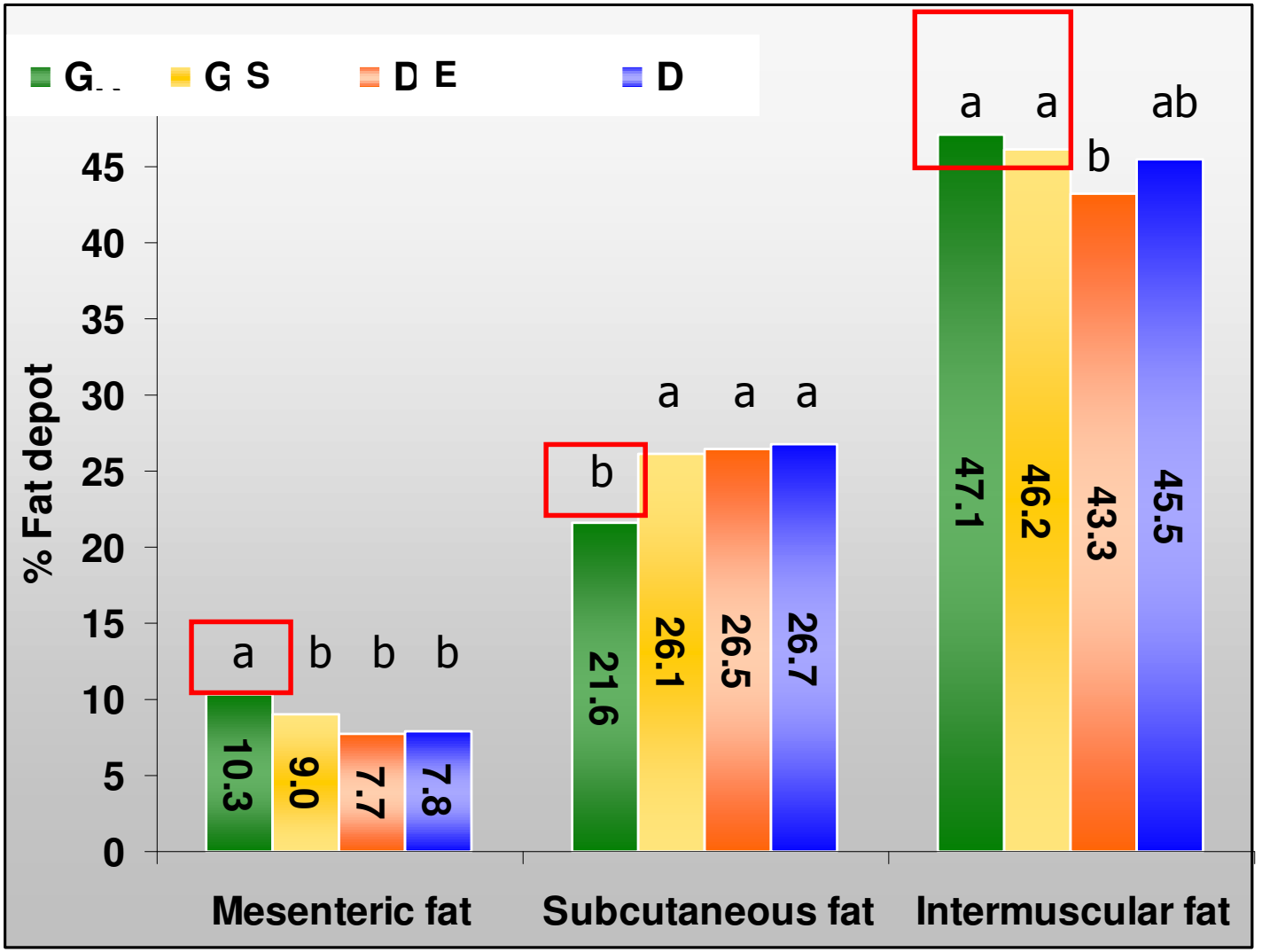
	G	GS	DE	D	SE	Effect
Daily gains (gr/day)	261^{c}	313^{a}	299^{ab}	282^{bc}	9.0	*
Age at Slaughter	76^{a}	63^{c}	66^{bc}	72^{ab}	2.3	***
Cold carcass (kg)	10.2^{b}	11.4^{a}	11.2^{a}	11.4^{a}	0.2	***
Dressing percentage(%)	47.3^{c}	51.4^{a}	49.0^{bc}	49.7^{ab}	0.6	***

Table 2.
Total fat and fat depot proportions

• There were differences in total fat (in kg) and fat depot proportion → lowest in G

Feeding system		Total Fat (Kg)
1	G	2.2 b
2	GS	2.7 a
3	DE	2.7 a
4	D	2.9 a
	SE	0.1
	Effect	**

Fat depot (%)	Feeding system
Omental fat	NS
Mesenteric fat	***
KKCF	NS
Subcutaneous fat	***
Intermuscular fat	***
Intramuscular	NS


G
G S
D E
D
% Fat depot
0
5
10
15
20
25
30
35
40
45
a
b
b
b
10.3
9.0
7.7
7.8
b
a
a
a
21.6
26.1
26.5
26.7
a
a
b
ab
47.1
46.2
43.3
45.5
Mesenteric fat
Subcutaneous fat
Intermuscular fat

CONCLUSIONS

•Grazing light lambs without supplementation and suckling their mothers until slaughter had the lowest subcutaneous fat proportion but the highest proportion of the mesenteric fat depot. However, the supplementation at pasture produced a similar total fat deposition to weaned concentrate-fed drylot lambs.

Thank you for your attention